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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,782	12/12/2001	Stephen Memory	665.00947	9531

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WOOD, PHILLIPS, VAN SANTEN, CLARK & MORTIMER
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EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 02/10/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,782

Applicant(s)

MEMORY ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 2-7, 9-12 and 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 8, 13 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment after final filed 1/20/2004 is not entered because claims 1,8 and 21-23 are not allowable and the new added claims are the claims directed to the non-elected species. Any inconvenience to applicant is regretted.

The indicated allowability of claims 8, and 23 are withdrawn in view of the reference(s) to Stoyhoff et al (US 2003/0075307); Hoshino (US 5,531,268) and Martins et al. (US 6,502,305). The indicated allowability of claims 1 and 21-22 are also withdrawn because the applicant's argument filed 8/14/2004 is not persuasive. The finality of that action is now withdrawn. Rejections based on the cited reference(s) follow.

Claims 1-23 are pending and claims 2-7,9-12 and 14-19 have been withdrawn from further consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Martins et al. (US 6,502,305). Martin discloses (figure 1) a heat exchanger module having a front and a back; a plurality of spaced rows of flattened tubes (5,10) from front to back and defining aligned tube runs in each row which are in fluid communication at the manifolds (6 and 12); fins (30)

Art Unit: 3743

abutted to adjacent tube runs in each row and extending from front to back so that each fin is common to each of the rows and slits (22) extending completely through the fin at a location in the space between the tube run. Martin further discloses (figure 4 and column 4, lines 5-15) that the slits (22) are formed without removal of any fin material and each edge of each slit is not displaced with respect to the opposite edge of the slit in an off plane direction or in the vertical direction (out of paper). As regarding applicant's argument that the edge of the slits are displaced with respect to each other by flattening of the stamping, has been carefully considered but is not deemed to be persuasive because the edge of each slit is still on the same plane. Therefore, the edge at least is not displaced with respect to each other in an out of paper direction (vertical direction).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8,13,20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshino et al. (US 5,531,268) in view of Stoynoff (US 2003/0075307A1). Hoshino discloses (figures 1 and 2) a heat exchanger used as an evaporator or a condenser in a car air conditioner which is well known in the art as a refrigeration system including compressor and transcritical refrigerant, the heat exchanger having a front and a back, a plurality of spaced rows of flattened tubes (1) from front to back and defining aligned tube runs (2,3) in each rows; serpentine fins

Art Unit: 3743

(12) abutted to adjacent tube runs; and the aligned ones of the tube runs being connected in hydraulic series. Hoshino does not disclose that the fins are common to each of the rows and to have slit without removal of any material from the fin.

Stoynoff et al. discloses (figures 1 and 2) a heat exchanger comprising a plurality of spaced apart tubes (14,32) wherein fins (16,34) are common in each row of tubes and separated the first tube run from the second tube run by slits (50) formed without removal of any fin material for the purpose of minimizing heat conduction between two tube runs and facilitating assembly. Since Hoshino and Stoynoff are both from the same field of endeavor and/or analogous art, the purpose disclosed by Stoynoff would have been recognized in the pertinent art of Hoshino. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Stoynoff's teaching in Hoshino's device for the purpose of minimizing heat conduction and facilitating assembly as recognized by Stoynoff.

Claims 8,13,20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshino et al. (US 5,531,268) in view of Martin et al. (US 6,502,305). Hoshino discloses (figures 1 and 2) a heat exchanger used as an evaporator or a condenser in a car air conditioner which is well known in the art as a refrigeration system including compressor and transcritical refrigerant, the heat exchanger having a front and a back, a plurality of spaced rows of flattened tubes (1) from front to back and defining aligned tube runs (2,3) in each rows; serpentine fins (12) abutted to adjacent tube runs; and the aligned ones of the tube runs being connected in hydraulic series. Hoshino does not disclose that the fins are common to each of the rows and to have slit without removal of any material from the fin. Martin further discloses (figures 1 and 5) a heat exchanger module (1,2) having a front and a back; a plurality of spaced rows of flattened

Art Unit: 3743

tubes (5,10) from front to back and defining aligned tube runs in each row; fins (30) abutted to adjacent tube runs in each row and extending from front to back so that each fin is common to each of the rows and slits (22) extending completely through the fin at a location in the space between the tube run. Martin further discloses (column 4, lines 5-15) that the slits (22) are formed without removal of any fin material. The motivation to combine the Hoshino and Martin is clearly stated in column 1, lines 37-47 that a heat exchanger with common fins such as common fins (30) would simplify the manufacture and make the heat exchanger more compact and furthermore to minimize the heat transfer between various heat-exchange region of the fin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Martin's teaching in Hoshino's heat exchanger to simplify the manufacture and make the heat exchanger more compact.

Claims 1, 13 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waldorf (US 4,688,394) in view of Martins (US 6,502,305). Waldorf discloses (figures 1, 2 and column 3, line 25- column 4, line 8) a motor vehicle air conditioner including a heat pump system (36) wherein the heat pump system having a compressor (11) for compressing a refrigerant; an evaporator (13) connected to an inlet of the compressor, a gas cooler (15,26) for receiving compressed refrigerant from the compressor in a cooling mode. Waldorf further discloses (figure 2, dashed lines) that in a heating mode, the gas cooler is an evaporator and the evaporator is the gas cooler. Waldorf does not disclose the details of the gas cooler (15,26). Martin discloses (column 1, lines 31-37) a compact gas cooler, which is used in a motor vehicle air conditioning system. Martin further discloses (figures 1 and 5) a compact gas cooler including a heat exchanger module (1,2) having a front and a back; a plurality of spaced rows of

Art Unit: 3743

flattened tubes (5,10) from front to back and defining aligned tube runs in each row; fins (30) abutted to adjacent tube runs in each row and extending from front to back so that each fin is common to each of the rows and slits (22) extending completely through the fin at a location in the space between the tube run. Martin further discloses (column 4, lines 5-15) that the slits (22) are formed without removal of any fin material and each edge of the slits is not displaced with respect to opposite edge of the slit in an off plane direction. The motivation to combine the Waldorf and Martin is clearly stated in column 1, lines 37-47 that a gas cooler with common fins such as common fins (30) would simplify the manufacture and make the gas cooler more compact and furthermore to minimize the heat transfer between various heat-exchange region of the fin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Martin's gas cooler in Waldorf to simplify the manufacture and make the gas cooler more compact.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Motegi et al. (US 6,142,220) discloses a fin with slits formed thereon wherein the slit has substantially no width or cutouts.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

Art Unit: 3743

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

February 3, 2004



Tho Duong

Patent Examiner.